

ON THE TRICHOPTEROUS GENUS *POLYCENTROPUS*, AND THE ALLIED GENERA.

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IN the present paper it is my intention to offer a few remarks on those insects belonging to the family *Hydropsychidæ*, which agree in possessing *three spurs on the anterior tibiæ*. Curtis was the first to notice the generic value of this character in the 12th volume of his *British Entomology* and he was followed by Stephens in the 6th volume of the *Mandibulata* in his *Illustrations*, where, in addition to Curtis' genus *Polycentropus*, two other genera are also described possessing this character, viz.: *Plectrocnemia* and *Cyrnus*, though in this latter genus he has grouped together some species belonging to widely different genera. In 1857, Brauer, in his useful little work *Neuroptera Austriaca*, adopts *Plectrocnemia*. In the *Synopsis of the British Phryganidæ*, published in the *Entomologist's Annuals*, Dr. Hagen forms only two genera with this character, viz.: *Plectrocnemia* and *Polycentropus*, into which last genus he merges *Cyrnus*; but, for reasons given hereafter, I think it advisable to keep these genera separate; nevertheless, from the confusion that exists in the types in Stephens' collection, it is evident that that author had no very clear idea of the characters laid down in his generic descriptions. In my investigations of these insects I have been much struck with the characters afforded by the neuriation, and feel satisfied, that with all propriety, we may give five British genera of *Hydropsychidæ* with tricalcarate anterior tibiæ. I would remark here that the neuriation is not well visible until the hairy clothing on the wings be removed by a camel-hair brush, and that a strong magnifying power is requisite to bring out the transverse veins. I must reserve detailed descriptions of these genera for my work on the British *Trichoptera*, as they would occupy too much space here; but have attempted, by short characters, to make my meaning clear. Almost the whole of these insects are of small size, and often very similar in general appearance, many of them having the wings sprinkled with numerous golden yellow spots. They are very active, and some of them run with facility on the surface of the water. The larvæ, according to my experience, frequent both standing and running waters. Pictet remarks, that the pupa of his *Hydropsyche senex* (*Plectrocnemia conspersa* Curtis) possesses external respiratory filaments, whereas they are wanting in the larva. The case is a heap of small stones loosely put together, and fixed on to some larger stone; these cases are frequently changed. When the larva is about to change to the pupa state, it constructs a more solid retreat.

The following attempt at a tabular arrangement of the genera, according to my views, may be useful.

- A.—With a transverse vein towards the middle of the costal margin of the anterior wings, uniting the *costa* and *sub-costa*.
- a.—Anterior branch of the *ramus discoidalis* (first-apical sector) in anterior wings, forming a forked cell on the apical margin.
- b.—Posterior wings broad; the anal portion well developed; costal margin slightly concave.
- c.—Intermediate legs of the female not dilated.—*Plectrocnesia*.
- cc.—Intermediate legs of the female dilated.—*Polycentropus*.
- bb.—Posterior wings narrow, especially at the base; costal margin with a slight elevation near the middle.—*Ecnomus*.
- aa.—Anterior branch of the *ramus discoidalis* in anterior wings, simple, not forked.—*Cyrnus*.
- AA.—Without a transverse vein uniting the *costa* and *sub-costa* near the middle.—*Neureclipsis*.

PLECTROCNEMIA—Stephens.

The single described species of this genus has great analogies with *Polycentropus*, and differs chiefly in the undilated intermediate legs of the female. It is also a larger and more robust insect than any species of *Polycentropus*, but the neururation is almost identical with that of some species of that genus. In the posterior wings the anterior branch of the *ramus discoidalis* forms a forked cell at the apex, and the discoidal cell is closed.

The synonymy of the single species is as follows:—

Plectrocnesia conspersa—Curtis.

Philopotamus conspersus, Curt. Phil. Mag. 1834, p. 213, 5; *Plectrocnesia conspersa*, Hag. Ent. Ann. 1861, p. 2, 87; *Hydropsyche senex*, Piet. Recherch, p. 219, 28, pl. 19, fig. 1 (1834); *Plectrocnesia senex*, Steph. Ill., p. 168, 1; Brauer Neurop. Aust., p. 39.

A widely distributed insect, probably not very common anywhere.

N.B.—*Plectrocnesia atomaria* (Schranck), Kol. gen. et spec. Trichop. pt. 2, p. 212, 1, has certainly no right to the synonyms there given, at any rate as far as regards the names of Curtis, Pictet, Stephens, and Brauer. Kolenati's species is a *Polycentropus* (vide *P. multiguttatus*).

POLYCENTROPUS—Curtis.

This genus, as restricted by me, may be yet further divided according to the neuration. I can speak with certainty of only four British species.

a.—In the posterior wings the anterior branch of *ramus discoidalis* forms a forked cell at the apex, and the discoidal cell is open.
—*P. flavomaculatus* and *P. multiguttatus*.

b.—Anterior branch of *ramus discoidalis* in posterior wings simple, the discoidal cell closed.—*P. subnebulosus* and *P. picicornis*.

Polycentropus flavomaculatus—Pictet.

Hydropsyche flavomaculatus, Pict. Recherch, p. 220, 29, pl. 19, fig. 2 (1834); *Polycentropus irroratus*, Curt. Brit. Ent. pl. 554 (1835); Steph. Ill. p. 178, 7; Hag. Ent. Ann. 1861, p. 3, 88; *P. pyrrhoceras*, Steph. Ill. p. 177, 3 (1836), not of Hagen; *P. fuliginosus*, Steph. Ill. p. 177, 4 (1836); *P. concinnus*, Steph. Ill. p. 178, 5, (1836) not of Hagen; *P. trimaculatus*, Steph. Ill. p. 178, 6, not of Curtis or Hagen; *P. subpunctatus*, Steph. Ill. p. 177, 1 (1836), partim.

This is the most common species of the genus, according to my experience, and seems to be generally distributed, preferring running waters, but also sometimes frequenting canals, &c. This and the next may be readily distinguished by the open discoidal cell of the hind wings, and also by another very constant character in the neuration, viz.: that the two first of the simple veins traversing the anal portion of the wing (termed *costulæ* by Kolenati) are connected at about the middle by a small transverse vein. These, I think, are the only instances in the British *Trichoptera* in which these two veins are united in that manner. The anal appendices are well developed. In *P. flavomaculatus*, from the middle of the upper margin of the last abdominal segment, there proceeds a broad membranous lobe, capable of considerable lateral extension by the living insect, but which is very liable to change form in drying; from under this lobe proceed the appendices intermed., which are strongly divergent and somewhat curved; app. sup. rather large, flat, obtusely rounded; app. inf. similar in form to the app. sup., lying close together on the ventral surface.

Polycentropus multiguttatus—(Curtis) Hag.

Polycentropus multiguttatus, Curt. Brit. Ent. p. 544 (1835)?; Hag. Ent. Ann. 1861 p. 4, 89; *Plectrocnemia atomaria*, Kol. gen. et. spec. Trichop. pt. 2, p. 212, pl. 1, fig. 10—11 (1859).

This species is so very similar in general appearance to the last that I might probably have overlooked it had not Dr. Hagen assured me that I had sent it to him long ago. I have found three or four examples among some old duplicates, but only one of these bears any indication of locality; that one is from Haslemere. In the male the lobe from the last segment is apparently more pointed than in *flavomaculatus* (but I have only noticed dry specimens), and the app. intermed. more claw-shaped and curved. The app. sup. present the most certain characters; they are long and pointed, with the apices incurved rather suddenly; the app. inf. are larger, but otherwise similar in form.

The synonymy of this species is a little doubtful. Unfortunately, at the time when Curtis' collection was sent away, I was not sufficiently acquainted with these insects. I noted that his *P. multiguttatus* and *trimaculatus* were identical, but may have been mistaken. The citation of Kolenati's species is given from a comparison made by Dr. Hagen, with a typical specimen in his collection.

Polycentropus subnebulosus—Stephens' Catalogue.

Polycentropus subnebulosus, Steph. Cat. p. 317, 3,598 (1829);
P. multiguttatus, Steph. Ill. p. 178, 8, partim (1836), not of
 Curtis; *P. pyrrhoceras*, Hag. Ent. Ann. 1861, p. 4, 90, not of
 Stephens.

Either a much overlooked or very local species. Mr. Barrett has found it abundantly near Haslemere, and I have also a single specimen from the Norfolk fens. The usual golden or yellow spots are very indistinct in this species, and only visible in specimens in good condition. It may at once be recognized by the form of the app. intermed. in the male. These are formed of two narrow tongue-like pieces placed closely together and bent under like a haustellum; between them is a long narrow lobe.

As a rule, I consider that mere catalogue names have no claim to the right of priority. I have adopted the name here given to avoid giving a new one. The types in Stephen's collection are two, one of which is this species with his small catalogue label "*subnebulosus*," the other is a female of *P. flavomaculatus*.

Polycentropus picicornis—Stephens.

Polycentropus picicornis, Steph. Ill. p. 177, 2 (1836); *P. pulchellus*,
 Hag. Ent. Ann. 1861, p. 5, 92.

A common species frequenting canals, and other still waters; very active and frequently running on the surface. It may be recognized by the first apical sector, or anterior branch of the *ramus discoidalis* in the

posterior wings, not ending in a forked cell. It is a pretty, sharply marked insect. Perhaps *Plectrocnemia liturata*, of Kolenati, belongs here. *Polycentropus picicornis*, of Hagen, is different.

CYRNUM—Stephens.

Although this genus was merged into the preceding, it seems to me advisable to restore it for the reception of those species in which the first apical sector (anterior branch of the *ramus discoidalis*) in the anterior wings is simple, and thus, as is truly remarked by Stephens, there are only four apical forks. Besides, the posterior wings are much narrower, the anal portion not dilated, and the anterior branch of the *ramus discoidalis* in these wings is not clearly separable from the *radius*, except, perhaps, at the extremity. I distinguish two British species, of which one is apparently undescribed.

Cyrnus trimaculatus—Curtis.

Philopotamus trimaculatus, Curtis Phil. Mag. 1834, p. 213; *Polycentropus trimaculatus*, Hag. Ent. Ann. 1861, p. 4, 91; *Cyrnus pulchellus*, Steph. Ill. p. 175, 2 (1836); *C. unipunctatus*, Steph. Ill. p. 175, 1 (1836), worn.

A common species about some of the canals and slowly flowing rivers near London, and probably widely distributed. The upper edge of the discoidal cell in anterior wings is sharply angulated at the point where a transverse vein connects it with the radius. The anterior wings are pale fuscous, thickly sprinkled with pale yellow spots, some of which, on the dorsal margin, are larger than the others. In the male the app. sup. are very small and rounded; app. intermed. rather long, pointed, straight; app. inf. large, almost truncated at the extremity.

In Stephens' collection under *C. pulchellus* are four of this species and one of *Polycentropus picicornis*.

Cyrnus flavidus—new species.

The only locality that I know with certainty to produce this species is the remnant of the Croydon canal at Forest Hill, Kent, where it is not very uncommon in May and June. The anterior wings are longer than in the last species, and the discoidal cell is not sensibly angulated at the point where the transverse vein uniting it to the radius is placed. The wings are very pale yellow, reticulated with grey. The app. intermed. are apparently wanting; the app. inf. are more rounded than in the last species. I reserve a detailed description for another opportunity.*

* This is closely allied to *Philopotamus urbanus*, Rambur, but after a careful comparison with the type, Dr. Hagen considers them distinct, and gives numerous reasons for arriving at that conclusion. Want of space prevents me from going into details here.

Cyrnus urbanus, Stephens, belongs to *Anticyra* (*Psychomia*), as does also probably *C. unicolor*, of which there is no type.

ECNOMUS—new genus.

I propose this generic term for the single species that I am at present acquainted with, in which the first apical sector in the anterior wings ends in a forked cell, but with the following characters presented in the posterior wings. These wings are very narrow at the base and scarcely folded; the costal margin is slightly elevated in the middle; the *ramus discoidalis* runs close to the costal margin, the upper branch simple, the lower forked, but no closed discoidal cell. The intermediate tibiæ and tarsi in the female are only slightly dilated.

Ecnomus tenellus—Rambur.

Philopotamus tenellus, Ramb. Hist. Nat. Nèvrop. p. 503, 4 (1842);
Polycentropus concinnus, Hag. Ent. Ann. 1861, p. 5. 93, not of
 Stephens.

Of this I possess several specimens, taken in the fens of Norfolk by Mr. Winter. Mr. Wormald has found it in Hyde Park in June. It is wanting in Curtis' and Stephens' collections. In the male the inferior appendices are long, and at the apex are furnished internally with numerous little teeth or spines.

Dr. Hagen has, I believe, seen Rambur's type, and informs me that there is no doubt as to the identity of the insects.

NEURECLIPSIS—new genus.

This genus is formed for the reception of the species that is considered as the *Phryganea bimaculata*, of Linnæus. This existed in Curtis' collection as *Polycentropus memorabilis*, but this name was never published. Dr. Hagen likewise places it in the genus *Polycentropus*, but it appears more advisable to transfer it to a separate genus in consequence of the very considerable differences in the neuration.

One striking character that I consider of primary importance is the absence of the transverse nervule, placed between the *costa* and *sub-costa*, towards the middle of the costal margin. This is present in all the other genera of *Hydropsychidæ*, with tricalcarate anterior tibiæ, and also in *Philopotamus*, and an allied genus. In other respects the neuration of the anterior wings is similar to *Polycentropus*, as here restricted, the first apical sector ending in a forked cell. The posterior wings are also similar in form to those of *Polycentropus*; the first

apical sector forked and the discoidal cell closed, but there is an additional apical forked cell, formed by the furcation of the anterior branch of the *ramus sub-discoidalis*; a similar structure is seen in *Tinodes*, *Hydropsyche*, and *Aphelocheira*.

Neureclipsis bimaculata—Linné.

Phryganea bimaculata, Linn. Faun. Suec. ed. 2, 1487 (1761) and his other works; *Polycentropus bimaculatus*, Hag. Ent. Ann. 1861, p. 6, 95; Kol. gen. et spec. Trichop. pt. 2. p. 215, 1, pl. 1, fig. 6; *Phryganea Tigurinensis*, Fab. Ent. Syst. Suppl. p. 201, 18-19 (1798); *Anticyra robusta*, Walker, Brit. Mus. Cat. Neurop. pt. 1 p. 122, 5.

Probably a generally distributed insect, by canals and marshy dykes. In this species the usual irrorated character of the markings is departed from, and the anterior wings are dull fuscous, with two conspicuous yellowish spots near the middle of the wing; the female is much paler and considerably larger.

NEW SPECIES OF BUTTERFLIES FROM GUATEMALA AND PANAMÁ.

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(Continued from page 6.)

11.—EUTERPE OCHRACEA.

♂. Expans. 2" 6". Fore-wing rather narrow; costa, from the middle to the tip, waved; apex obtuse; outer margin in the middle sharply incurved. Above: all wings brownish black, basal halves palish ochreous, with costa and veins (especially those at apex of cell of fore-wings) bordered with brownish black; the broad brownish black outer borders have a continuous row of ochreous spots distant from the margin; margin of hind-wings with small ochreous spots in the intervals between the nervules. Beneath: paler than above; base of the wings dusky; the fore-wing has on the outer margin a row of yellow linear spots, and the hind-wing, besides these marginal spots, has also two rows of yellow spots crossing the disk, and three spots near the base; the extreme base of the wing has two large red spots. Body and antennæ above, black.

Table lands, Guatemala. Closely allied to *Eu. Nimbice* (Boisd.) Differs in the shape of the fore-wing, and in the pale ochreous colour, which, above, extends to the base of the wings.